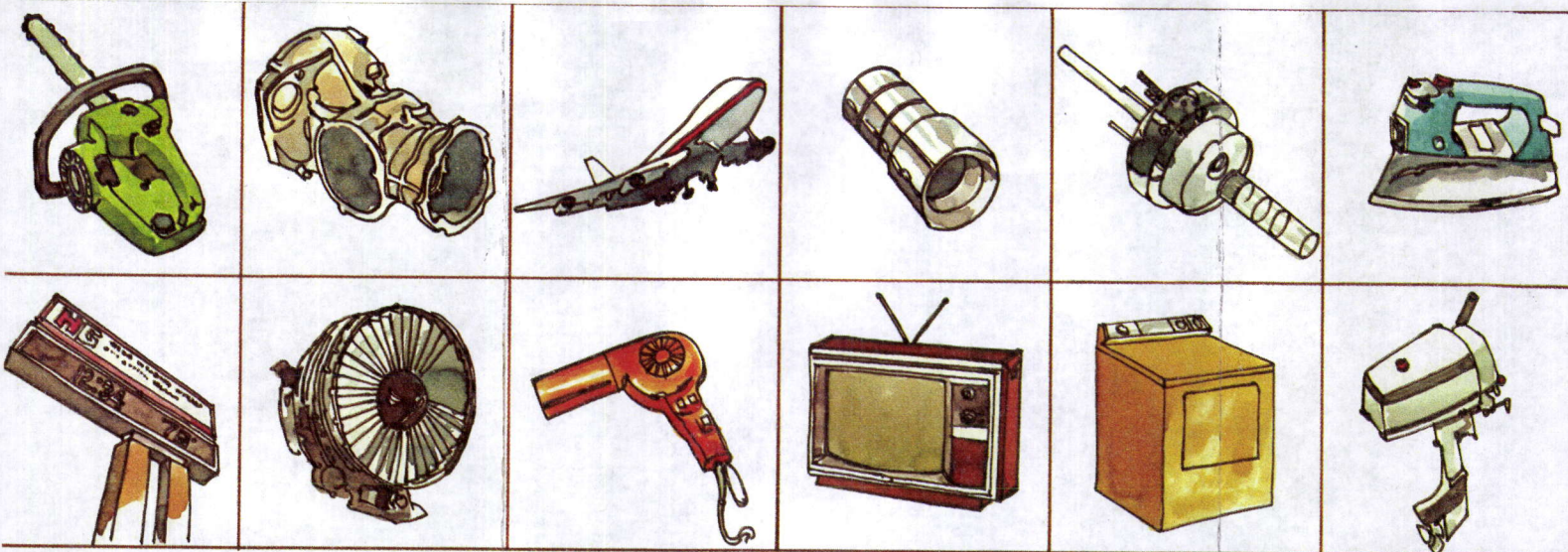


AMAX
SPECIALTY METALS



AMAX SPECIALTY METALS

We Touch Your Life Every Day

In the total silence of deep space, an unmanned probe hurtles toward its rendezvous with a distant planet. Inside this creation of American ingenuity is wiring and circuitry made from special metals designed to withstand the alien environment of space and to perform flawlessly on command from Earth.

On Earth, people are going about their daily tasks. Magnesium parts are assembled to build energy efficient automobiles. Molybdenum electrodes are used in a glass factory to produce energy saving insulation; molybdenum and tungsten components are utilized in a CAT* Scanner for use in man's continuing fight against disease, and throughout the world, special purpose alloys from AMAX Specialty Metals Corporation (ASMC) are used to produce more energy efficient TV sets, radios, toasters, coffee pots and electric irons. It's another day where, throughout the world, hundreds of millions of people will find their lives touched by the products of AMAX Specialty Metals Corporation.

Most of us spend little time, if any, thinking about the electrodes inside a sparkplug, or the heating elements in a coffee pot. But worldwide, these and many other products of AMAX Specialty Metals, are called upon daily. The products are not generally visible, but are an integral part of everything from electric washers and dryers to rockets and that unmanned space probe millions of miles from Earth.

The story of AMAX Specialty Metals Corporation stretches from the quiet pinetree covered countryside of South Carolina, to the stark beauty of the desert surrounding Utah's Great Salt Lake, to the

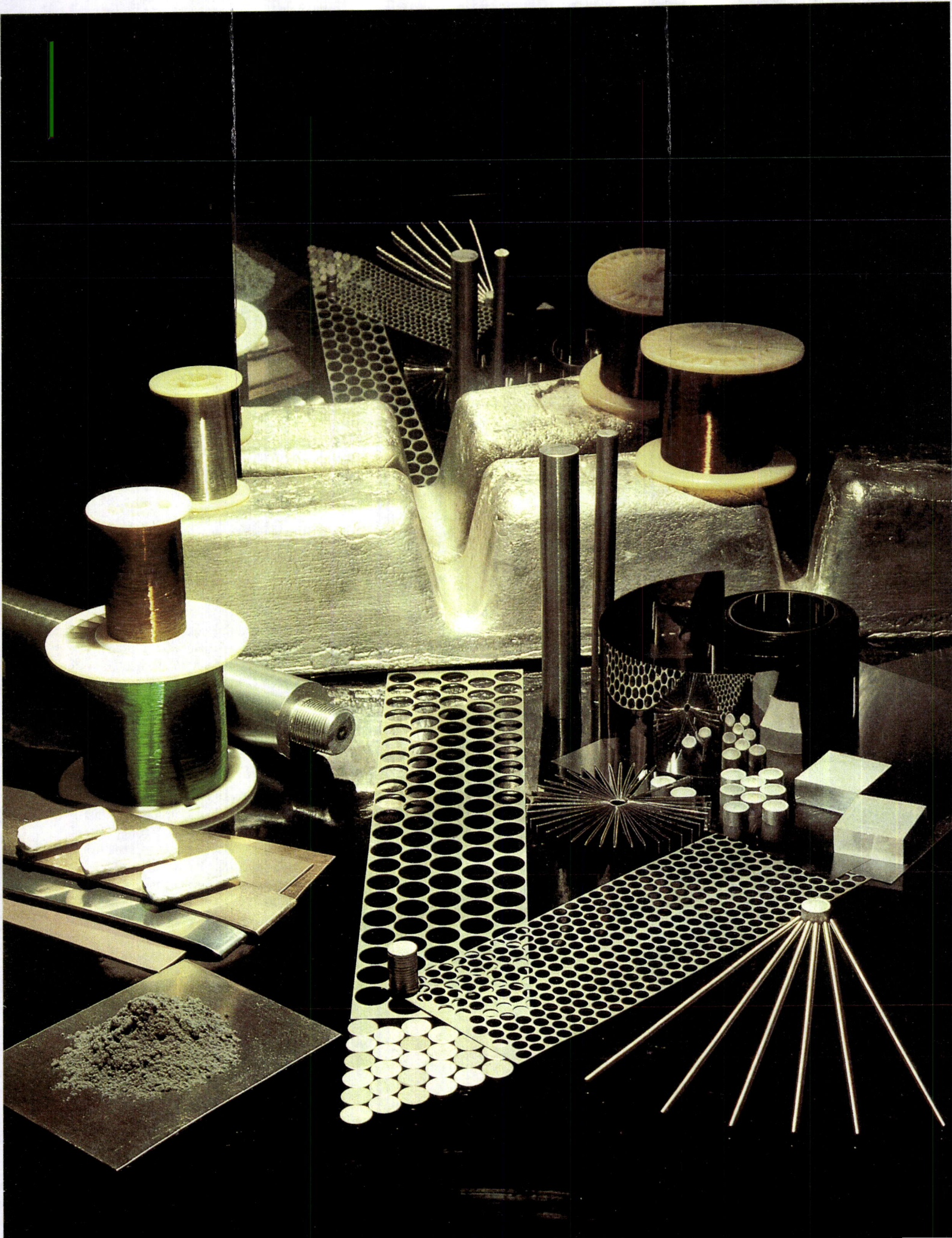
industrial complexes of New Jersey, Ohio, Michigan and Ontario, Canada. These are the places where the people of AMAX Specialty Metals go about their daily tasks of producing special purpose metal products that help keep America and the world working.

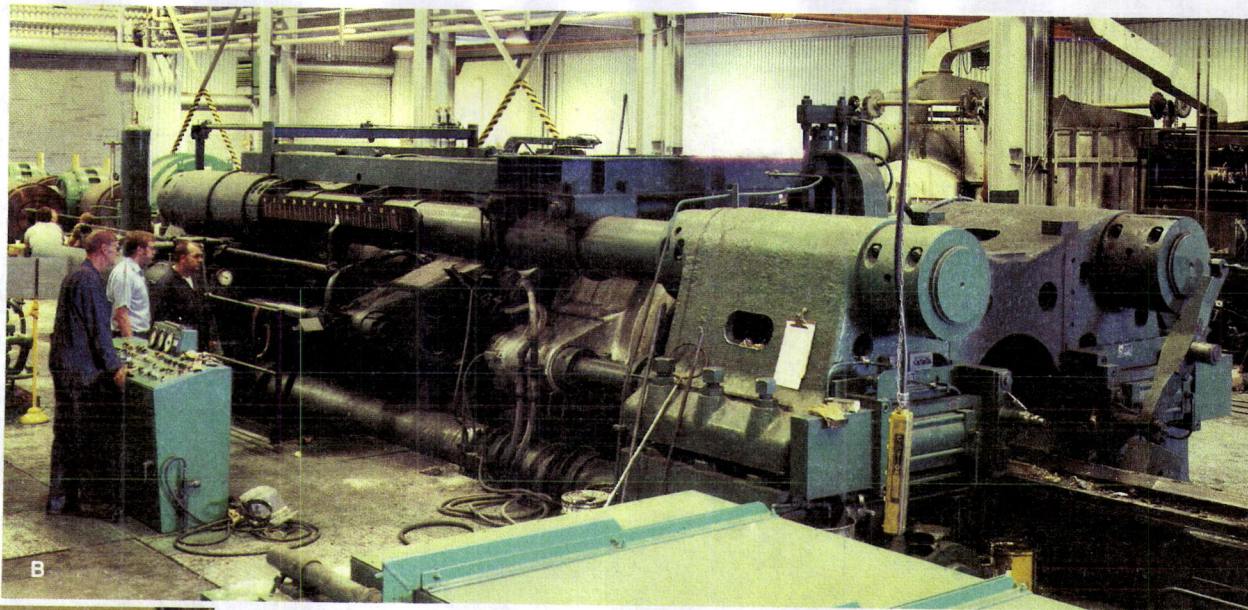
Headquartered in Parsippany, New Jersey, AMAX Specialty Metals Corporation is a subsidiary of AMAX Inc., a world leader in natural resource development. AMAX moved into the area of specialty metals production in 1958 when a plant was opened in Coldwater, Michigan, to produce high quality molybdenum powders, melt stocks and mill products. By 1972, more facilities had been added, and with 500 employees and sales of \$11 million, AMAX Specialty Metals Corporation was created as a subsidiary of AMAX Inc. Since that time, the growth and development of ASMC has been dramatic, with a current workforce nearing 2,000 and annual sales exceeding \$200 million and growing.

The wide diversity of items produced by the three divisions of AMAX Specialty Metals often see their beginning in other units of AMAX Inc. Raw materials utilized by ASMC include alloying elements produced by AMAX's Copper, Molybdenum, Nickel and Tungsten divisions. In finished form, the products of AMAX Specialty Metals go to nearly 5,000 customers around the world.

The transformation of copper, molybdenum, nickel, tungsten and other raw materials into highly engineered, precision products, is a fascinating and exciting process—and it's the story of the people who are AMAX Specialty Metals Corporation.

*Computerized Axial Tomography





B

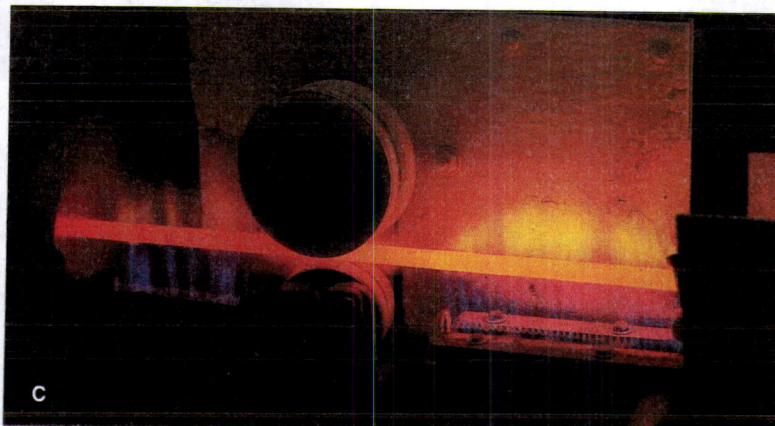


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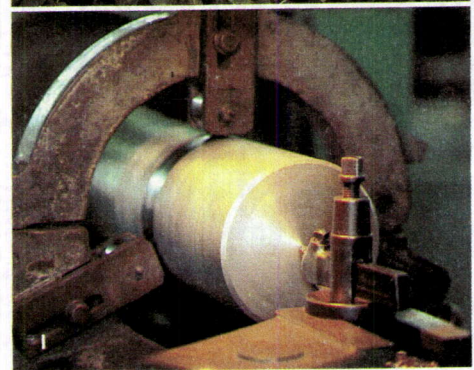
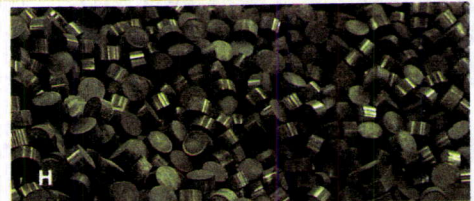
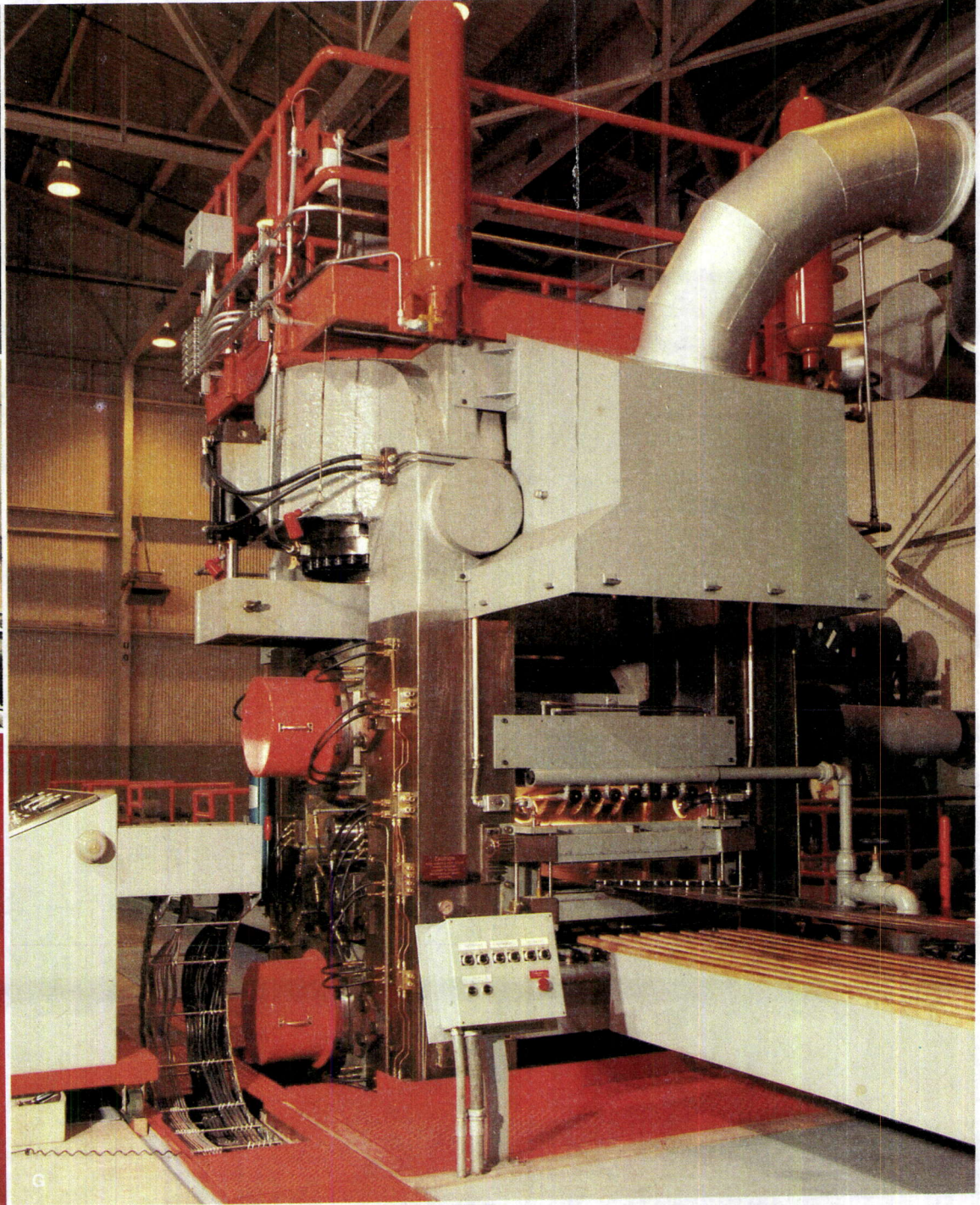
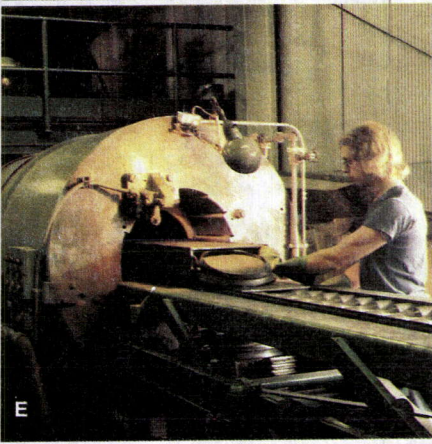
REFRACTORY METALS . . . FOR THE TOUGH JOBS

Molybdenum, like AMAX Specialty Metals Corporation, is not exactly a household word. AMAX Inc. is the world's largest producer of what is commonly called "moly," a metal best known for its uses as an alloying agent in the steel industry. But, as AMAX Specialty Metals knows, the uses for pure molybdenum powder and mill products extend far beyond the basics.

Input raw material is converted to pure molybdenum powder at the metal reduction facility which ASMC operates in Coldwater, Michigan. Hot and cold-rolling mills at both the Coldwater and Cleveland, Ohio, plants produce quality round and flat-mill products of molybdenum, molybdenum alloys, tungsten and other special purpose alloys. The unique physical and mechanical properties which make moly and tungsten ideally suited for numerous applications also cause these metals to be difficult to work. As a result, AMAX Specialty Metals has unique equipment required for their processing, such as atmosphere furnaces which heat to 3,300°F, and precision rolling mills with three-million-pound separation force capacities. The 5,500 ton extrusion press at Coldwater serves to process the vacuum arc-cast melted molybdenum which ASMC produces exclusively, along with toll produce tubing and custom shapes of nickel, titanium, copper, columbium, tantalum and super-conducting alloys.



C



The products of ASMC's Refractory Metals Division touch our lives daily in many consumer products. They also play a significant role in the industrial sector. For example, molybdenum sheet lines high-temperature vacuum furnaces used in heat treating and joining steel components; molybdenum and tungsten discs serve as substrates in solid-state electronic devices; close-tolerance moly and tungsten sheet are photo-chemically etched into critical computer parts. Alloy steel, solid-state power supplies, computer components—just three of the many types of items that touch our lives daily and that depend upon AMAX Specialty Metals for quality, durability and dependability.

- A** Hot Shearing of Molybdenum Plate, Cleveland, Ohio
- B** Extrusion Press, Coldwater, Michigan
- C** Hot Swaging Molybdenum Rod, Coldwater, Michigan
- D** Molybdenum Bulk Shipping Containers, Coldwater, Michigan
- E** Isostatic Press, Coldwater, Michigan
- F** Refractory Metal Products
- G** Automated Cold Rolling Mill, Cleveland, Ohio
- H** Pure Molybdenum Pellets, Coldwater, Michigan
- I** Extrusion Billet Machinery, Coldwater, Michigan

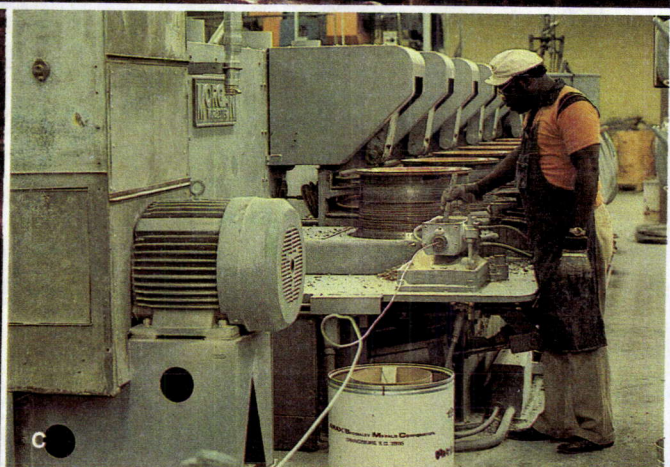
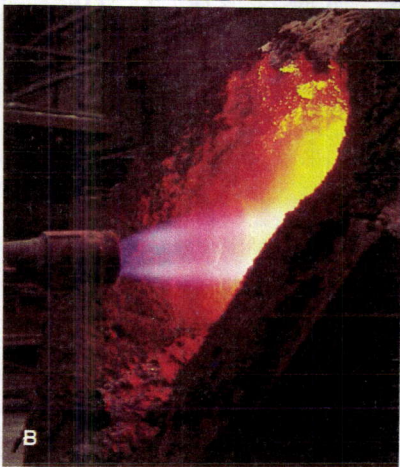
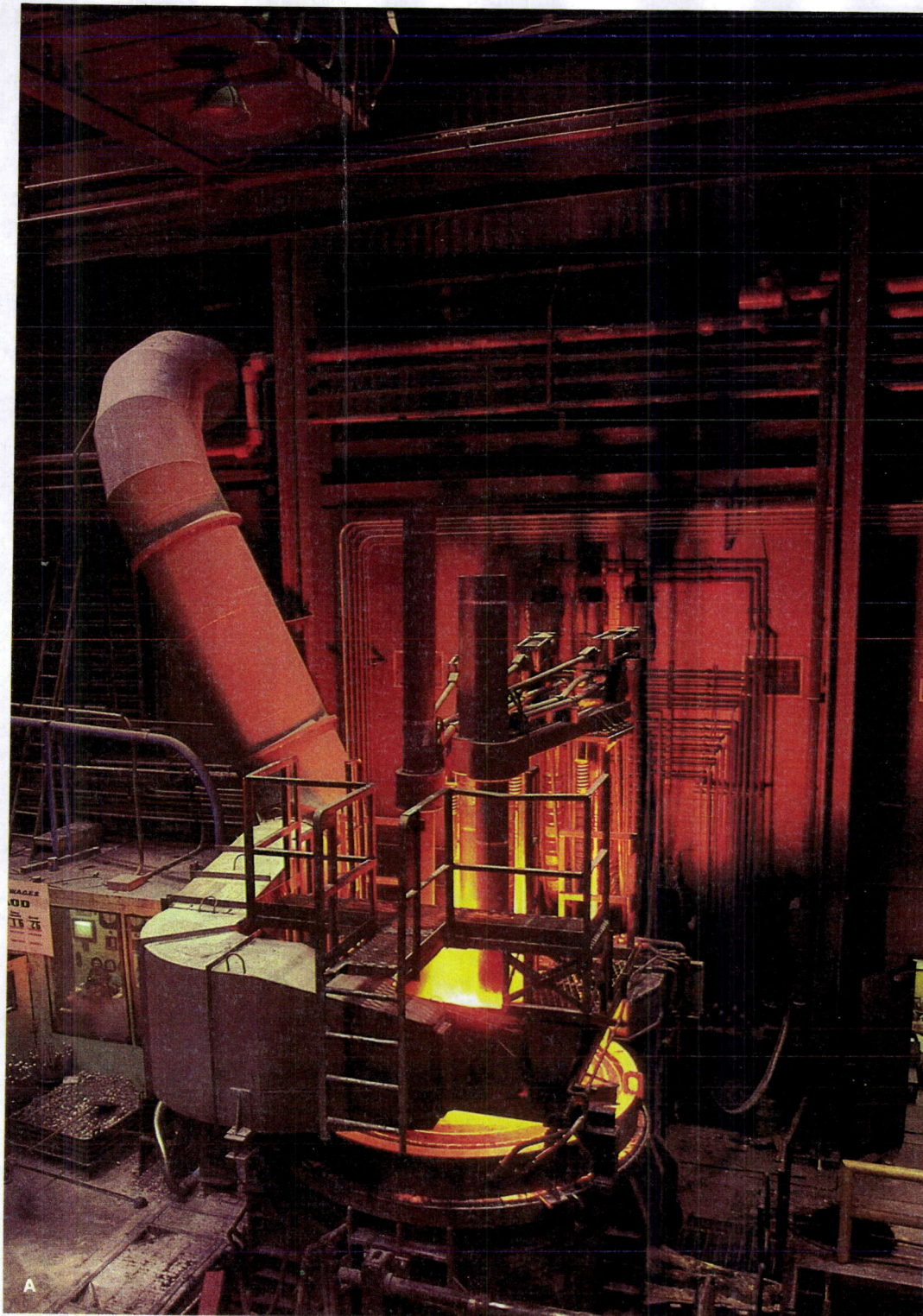
SPECIAL PURPOSE ALLOYS . . . WIRE, RIBBON AND STRIP FOR THE WORLD

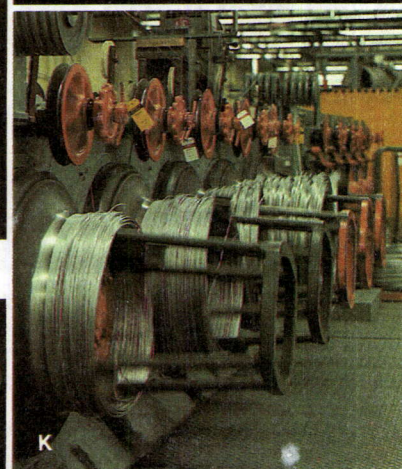
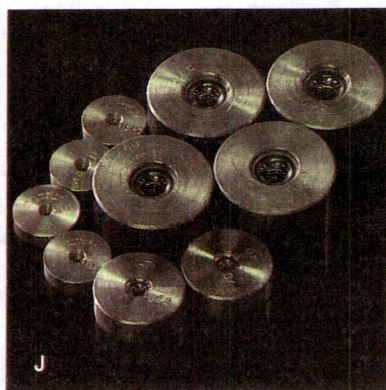
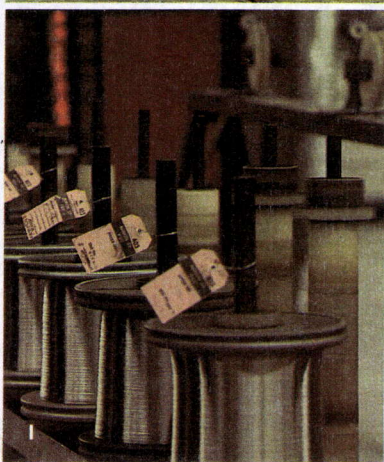
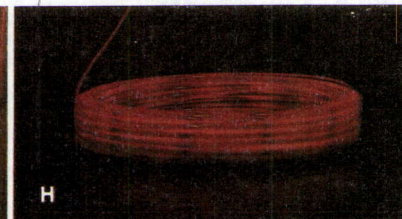
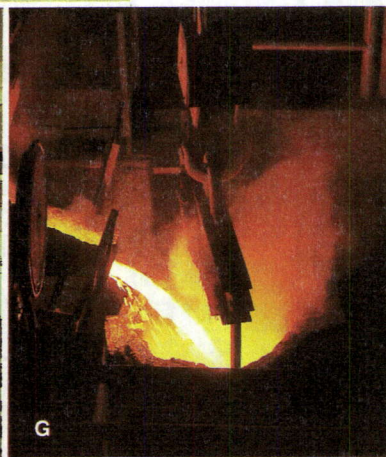
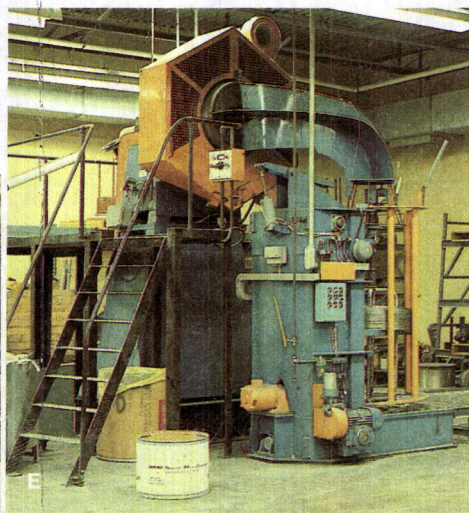
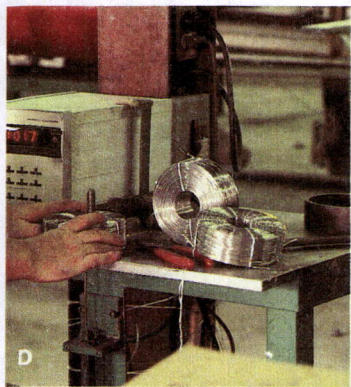
AMAX Specialty Metals does not make common wires, but its Alloy Division does make wire on which all of us depend each day. Rodar®, Tophet®, Evanohm®, names that sound like science fiction. Science, yes. Fiction, no. These are ASMC-produced special purpose alloys that find their way into our everyday lives.

Evanohm®, for example, is a combination of nickel, chromium, aluminum and manganese. This combination produces a high quality alloy with high electrical resistivity, yet one which can be drawn into wire as fine as 0.0005 (5/10,000) of an inch in size, much finer than a human hair. Technical control of the production of this wire product is exacting, as more than 50 different manufacturing steps are performed in its creation! This custom-made wire is used extensively in the electronics industry. The wire contained in a one-pound spool of Evanohm®, at a diameter of 0.0005, would extend more than 275 miles.

The production of special purpose alloys by AMAX Specialty Metals begins in its melting and hot rolling facilities in Florham Park, New Jersey. Utilizing electric arc, AOD (Argon-Oxygen-Decarburization), electroslog, induction air and vacuum furnaces, controlled quality molten alloys are produced and poured into ingot molds. The ingots of Rodar®, Tophet®, Evanohm®, and some 100 other alloys, are later reheated and rolled into rod. Moving in a curving, rolling, roller-coaster-like mill, the red hot alloy bar is rolled into a one-quarter-inch diameter rod of 1,300 feet in length, and then quickly coiled while still red hot. When cooled, the coils are packaged for shipment to the company's wire and ribbon-drawing facilities in Rexdale, Ontario, and Orangeburg, South Carolina—the largest wire plant in the world dedicated to the production of the special property alloy wires used in the electronics, resistance and controls industries. Strip products of AMAX Specialty Metals are also hot-rolled in Florham Park and shipped to the firm's cold-rolling mill in Newark, New Jersey.

Once received at the Newark, Rexdale and Orangeburg facilities, the alloys are cold-reduced to finished sizes. Coiled rod is reduced in diameter by drawing it through





a series of progressively smaller carbide and diamond dies, until the final size is reached. At this point, the wire may be wrapped with insulation or coated with special insulating enamels, depending upon the customer's specifications. Strip or ribbon-alloy products are rolled to finished sizes in computer-controlled mills. The applications of these special purpose alloys are endless, and the list of major manufacturers that use them reads like a "Who's Who" of business. They touch your life in your kitchen, your car and in your job on a daily basis as heating elements in your toaster, or electric range, and wiring for the headlight switch and car radio, and for that calculator you use at work or at home.

- A Arc Melting Furnace, Florham Park, New Jersey
- B Preheating the AOD Vessel, Florham Park, New Jersey
- C Wire Drawing, Orangeburg, South Carolina
- D Electronic Gauging of Wire, Rexdale, Ontario, CANADA
- E Heavy Wire Take-up Machine, Orangeburg, South Carolina
- F Wire Cleaning, Orangeburg, South Carolina
- G Tapping the Arc Furnace at Florham Park, New Jersey
- H Coiling Hot Rolled Rod, Florham Park, New Jersey
- I Spooled Wire, Orangeburg, South Carolina
- J Wire Drawing Dies, Rexdale, Ontario, CANADA
- K Heavy Wire Winding, Orangeburg, South Carolina

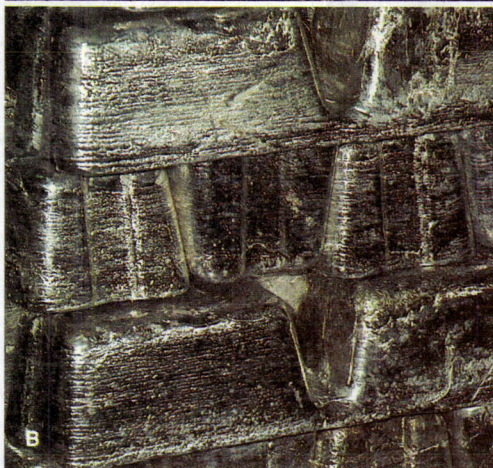
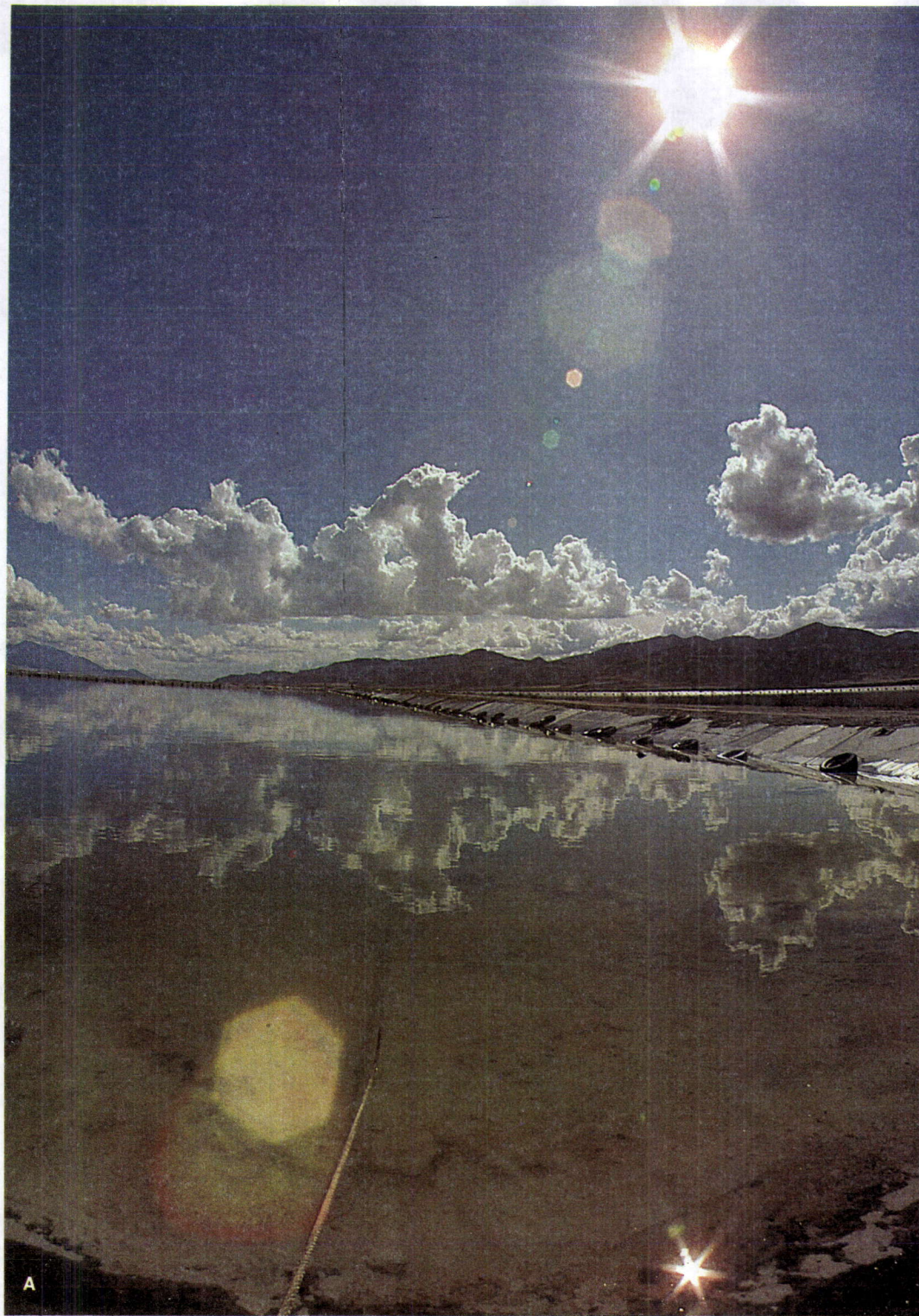
MAGNESIUM...THE BRIGHT METAL WITH A BRIGHT FUTURE

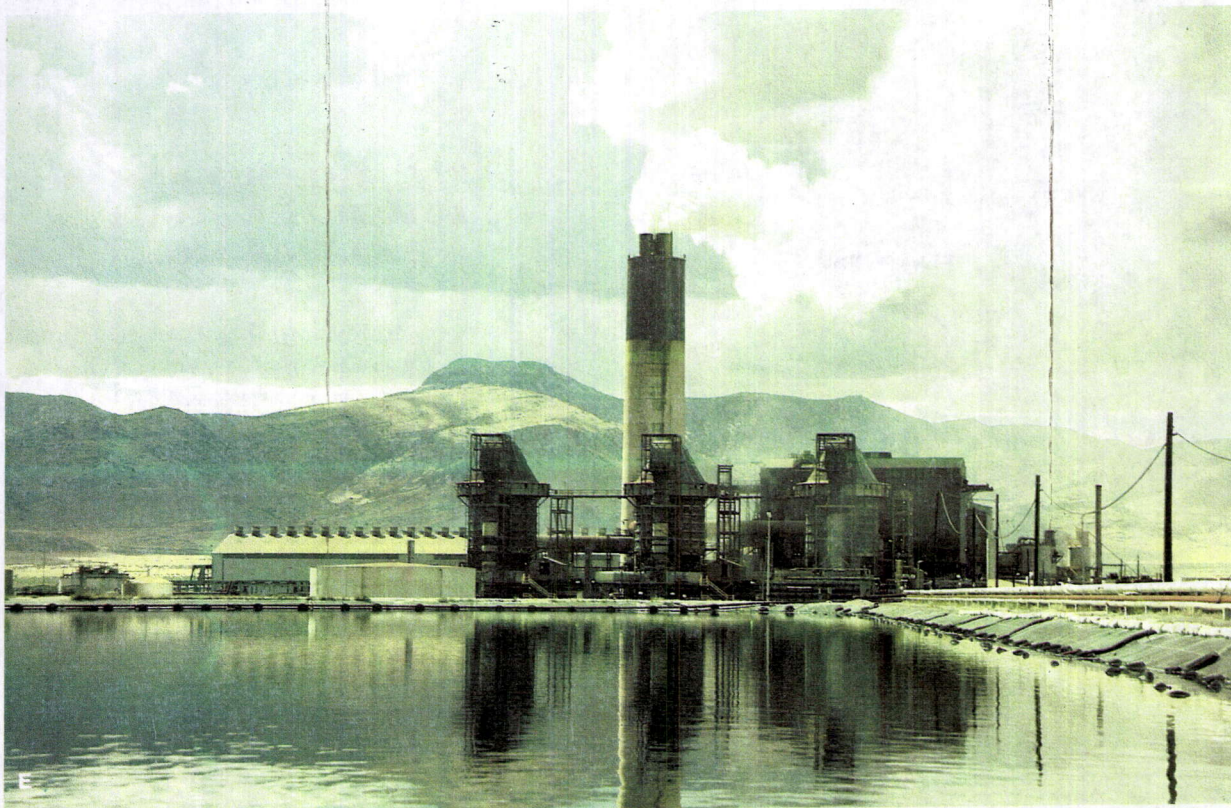
Nearly 65 miles west of Salt Lake City, at the very edge of Utah's Great Salt Lake, sits AMAX Specialty Metals' Magnesium Division. This newest ASMC unit holds bright promise for growth and development, especially from the automobile industry, as constant efforts are made to reduce total auto weight in order to increase fuel efficiency.

Utilizing the world's largest solar ponding installation and unique processes, AMAX chemically removes the impurities and water from the brines of the Great Salt Lake to produce salt-like magnesium chloride powder. The powder is then melted, further purified and subjected to electrolysis which separates the magnesium and chlorine.

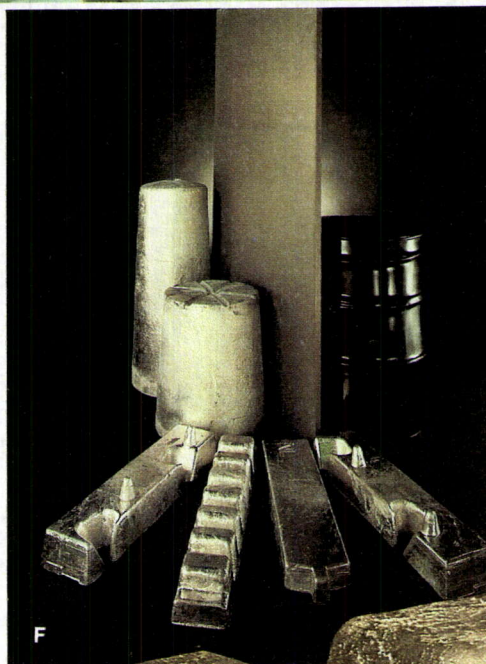
The magnesium is further refined, alloyed and cast into ingots for shipment, and the chlorine gas is liquified. Interestingly, some of the liquified chlorine is used in the early purification processes in the plant, with the remainder being shipped to outside customers for use in the production of plastics, for water purification and chemical production.

The magnesium ingots, some weighing as much as 500 pounds, are shipped to customers around the world. Magnesium finds its way into our everyday lives as an alloying agent used in aluminum beverage cans and weight saving components of household articles, sporting goods and industrial equipment. Magnesium alloys are cast into automotive parts including engine blocks and transmission cases—examples of lightweight magnesium's energy saving applications.





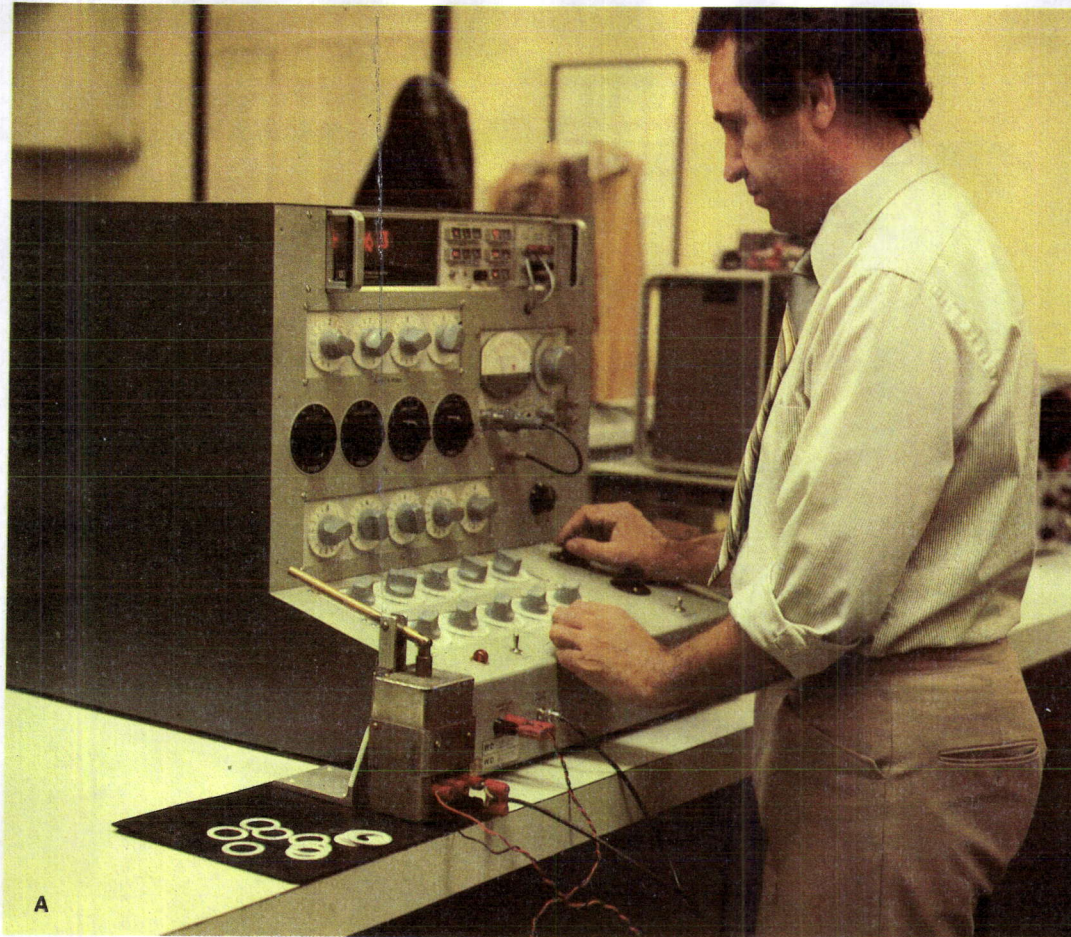
AMAX Specialty Metals has plans for expanded production of its Utah magnesium facility. In a world filled with concern for energy conservation, the lightweight but strong, bright metal appears to have an even brighter future, especially when one considers that 95 percent of the total energy consumed to produce one pound of magnesium at AMAX's Utah plant comes from the sun.



- A, D** Brine Holding Reservoir, Great Salt Lake, Utah
- B** Magnesium Ingots
- C** Magnesium Ingots Palletized for Shipment
- E** Great Salt Lake Magnesium Plant as Viewed From Brine Holding Reservoir.
- F** Magnesium Products
- G** A 25-Pound Magnesium Ingot



G

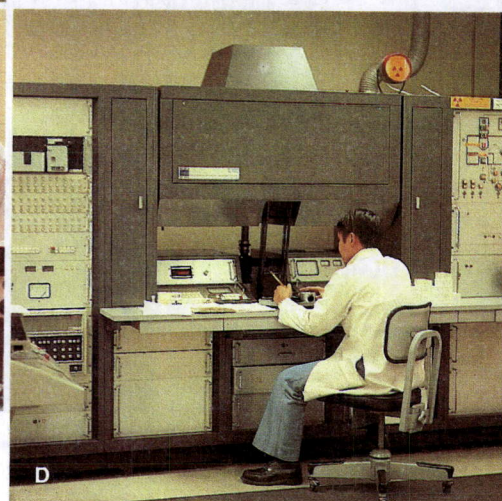
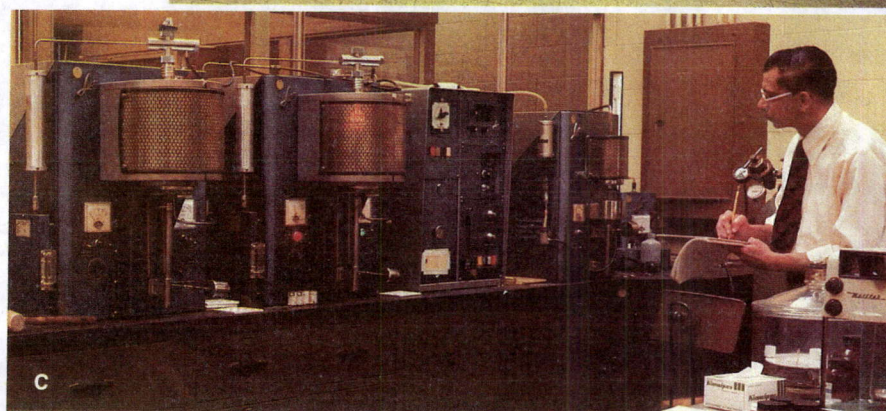
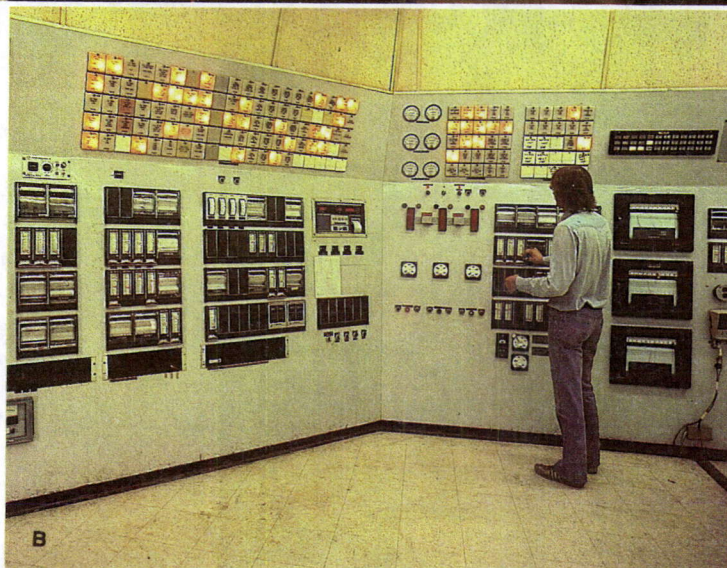
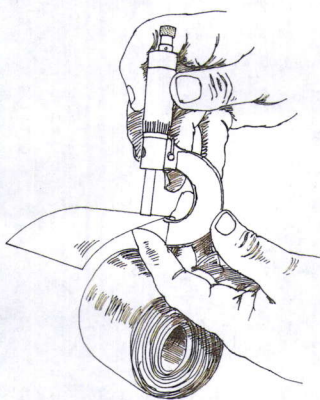


TECHNOLOGY AND QUALITY CONTROL . . . A FULLTIME JOB

AMAX Specialty Metals' concern for quality is manifest throughout all its manufacturing processes—and in each of the corporation's operations. Constant monitoring assures that our products are meeting our own demanding standards, and more importantly, our customer's specified requirements. Laser gauging is constantly monitoring the diameter of wire. Beta radiation gauges record thicknesses and tolerances of strip and sheet production in our rolling mills. In laboratories, samples of metal are analyzed for chemical composition and tested for electrical, mechanical and physical properties. Customer specifications allow no room for error—neither does AMAX Specialty Metals.

Our business is a demanding one—demanding highly qualified, technically proficient people. We are committed to our products—to dependability, to quality, and to an unending desire to find new and better ways to serve the industrial and business communities of tomorrow.

AMAX Specialty Metals is providing materials to make products that touch the lives of people the world over every day. We strive for quality in everything we make, because, like you, the products of AMAX Specialty Metals Corporation touch our lives too.



- A Computerized AC Magnetic Permeability Tester, Newark, New Jersey
- B Process Control Room, Salt Lake Magnesium Plant
- C Analytical Equipment, Coldwater, Michigan
- D X-Ray Quantometer, Florham Park, New Jersey

Alloy Division

PLANT LOCATIONS

New Jersey
Columbia Road
Florham Park,
New Jersey 07932
(201) 377-6398

New Jersey
241 Oraton Street
Newark,
New Jersey 07104
(201) 481-3100

South Carolina
Cameron Road and Route 33
PO Box 1467
Orangeburg, South Carolina
29115
(803) 534-6910

CUSTOMER SERVICE CENTERS

California
16331 Arthur Street
Cerritos, California 90701
(213) 404-2940

Illinois
545 Busse Road
Elk Grove Village, Illinois 60007
(312) 439-6170

North Carolina
P.O. Box 7267
14620 Carowinds Boulevard
Charlotte, North Carolina 28217
(704) 588-1930

SALES AND MARKET DEVELOPMENT

New Jersey (Div. Sales & Market Development)
600 Lanidex Plaza
Parsippany, New Jersey 07054
(201) 884-2900
Telecopy: (201) 884-2971

Missouri
4534 North Lindbergh Boulevard
Suite 218
Bridgeton, Missouri 60344
(314) 731-1004

Ohio

21801 Tungsten Road
Cleveland, Ohio 44117
(216) 692-3990

United Kingdom
Hodford House, Suite 26
17-27 High Street
Hounslow, Middlesex, TW3
(570) 1606-44-1

Alloy Division—Canada

HEADQUARTERS, PLANT AND SALES

Canada
50 Ronson Drive
Rexdale, Ontario, Canada MGW
1B3
(416) 247-7185

Magnesium Division

PLANT LOCATIONS

Utah
AMAX Magnesium Corporation
Salt Lake, Utah 84116
(801) 532-1522

SALES AND MARKET DEVELOPMENT

Utah (Division & Market Dev.)
238 North 2200 West
Salt Lake City, Utah 84116
(801) 532-2043

Ohio
85 Keswick Drive
Hudson, Ohio 44236
(216) 653-5896

Refractory Division

PLANT LOCATIONS

Michigan
460 Jay Street
Coldwater, Michigan 49036
(517) 279-9511

SALES AND MARKET DEVELOPMENT

New Jersey (Div. Sales and Market Development)
600 Lanidex Plaza
Parsippany, New Jersey 07054
(201) 884-2900

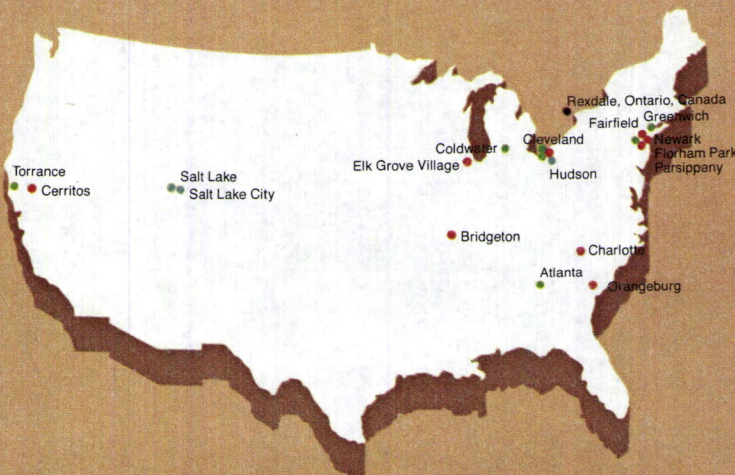
California
3868 Carson Street
Torrance, California 90503
(213) 540-2633

Connecticut
One Greenwich Plaza
Greenwich, Connecticut 06830
(203) 622-3550

Georgia
2971 Flowers Road South
Atlanta, Georgia 30341
(404) 451-7788

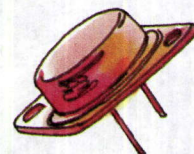
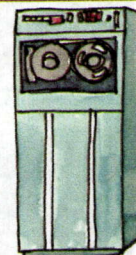
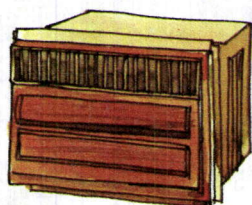
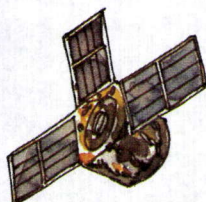
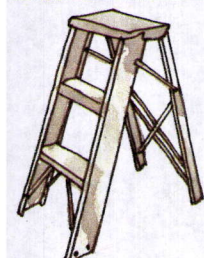
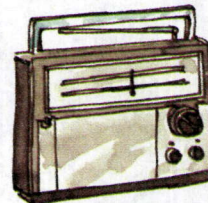
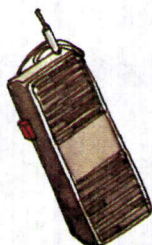
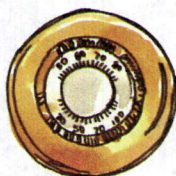
Ohio
21801 Tungsten Road
Cleveland, Ohio 44117
(216) 692-3990

United Kingdom
Hodford House, Suite 26
17-27 High Street
Hounslow, Middlesex, TW3
(570) 1606-44-1



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AMAX
SPECIALTY METALS

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